APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/616,411	07/08/2003	John Guthrie	OVERLND.158A	9291

20995 7590 05/25/2007 KNOBBE MARTENS OLSON & BEAR LLP 2040 MAIN STREET FOURTEENTH FLOOR IRVINE, CA 92614	**EXAMINER** DAYE, CHELCIE L

ART UNIT	PAPER NUMBER
2161	

NOTIFICATION DATE	DELIVERY MODE
05/25/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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PTOL-90A (Rev. 04/07)

	Application No.	Applicant(s)
Office Action Summary	10/616,411	GUTHRIE, JOHN
	Examiner	Art Unit	
	Chelcie Daye	2161	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _06 March 2007_.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _21-40_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _21-40_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

        1.☐ Certified copies of the priority documents have been received.

        2.☐ Certified copies of the priority documents have been received in Application No. _____.

        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

1.   This action is issued in response to applicant's RCE filed March 06, 2007.

2.   Claims 1-40 are presented. Claims 22-40 are added and claims 1-20 are

cancelled.

3.   Claims 21-40 are pending.

Continued Examination Under 37 CFR 1.114

4.   A request for continued examination under 37 CFR 1.114, including the fee set

forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this

application is eligible for continued examination under 37 CFR 1.114, and the fee set

forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action

has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on March

06, 2007 has been entered.

Claim Objections

5.   The numbering of claims is not in accordance with 37 CFR 1.126 which requires

the original numbering of the claims to be preserved throughout the prosecution. When

claims are canceled, the remaining claims must not be renumbered. When new claims

are presented, they must be numbered consecutively beginning with the number next

following the highest numbered claims previously presented (whether entered or not). In

particular, claim 23 is represented twice within the newly added claims.

Misnumbered claims 23 need to be renumbered.

6.   Claim 24 is objected to under 37 CFR 1.75(c), as being of improper dependent

form for failing to further limit the subject matter of a previous claim. Specifically, claim

24 is dependent upon itself. Applicant is required to cancel the claim(s), or amend the

claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in

independent form.   .

Claim Rejections - 35 USC § 101

7.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of
> matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the
> conditions and requirements of this title.

8.   Claim 21 is rejected under 35 U.S.C. 101 because the claimed invention lacks

patentability utility.

An invention that is "inoperative" (i.e., it does not operate to produce the results

claimed by the patent applicant) is not a "useful" invention in the meaning of the patent

law. See, e.g., Newman v. Quigg, 877 F.2d 1575, 1581, 11 USPQ2d 1340, 1345 (Fed.

Cir. 1989); In re Harwood, 390 F.2d 985, 989, 156 USPQ 673, 676 (CCPA 1968) ("An

inoperative invention, of course, does not satisfy the requirement of 35 U.S.C. 101 that

an invention be useful.").

In the present case, claim 21, allow for associating nodes, copying nodes, and

checking for an indication within certain nodes, however, the last limitation of states "if

said indication is found, performing the modification without replacing any nodes". As

such, since the term 'if' is a relative term this allows the particular limitation of

performing the modification to be a conditional limitation, which allows the system to

possibly not perform a modification, thus not producing any results. As a result,

rendering the system inoperable.

To expedite a complete examination of the instant application, the claims

rejected under 35 U.S.C. 101 (lack of utility) above are further rejected as set forth

below in anticipation of applicant amending these claims to place them within the four

statutory categories of invention with utility.

Claim Rejections - 35 USC § 103

9.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10.   Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hitz

(US Patent No. 5,819,292), in view of Eshel (US Patent No. 6,959,310).

Regarding Claim 21, Hitz discloses a method in a computer system for

creating a file system snapshot, the data of the file system being organized

hierarchically via nodes, the method comprising:

associating with one or more current file system nodes an indication

(column 22, lines 37-39, Hitz) that said nodes are not to be part of a

subsequently created snapshot (Fig.11B; column 9, lines 55-63 and column 22,

lines 11-14, Hitz);

copying a root node of the file system to a new node that points to the

same child nodes of the root node (column 18, lines 19-23, Hitz), wherein the

new node represents a root node of the snapshot (column 18, lines 24-26, Hitz);

and

when a node of the file system is modified[1] (columns 6 & 7, lines 67 and 1,

respectively, Hitz). However, Hitz is silent with respect to checking the node and

ancestor nodes of the node for said indication. On the other hand, Eshel

discloses checking the node and ancestor nodes of the node for said indication

(column 14, lines 60-67, Eshel). It would have been obvious to one of ordinary

skill in the art at the time of the invention to incorporate Eshel's teachings into the

Hitz system. A skilled artisan would have been motivated to combine in order to

assure that every node, which needs to be indicated, has done so. Thereby,

maintaining consistency throughout the system. Therefore, the combination of

Hitz in view of Eshel, disclose if said indication is found, performing the

modification without replacing any nodes (column 19, lines 23-67, Hitz).

Regarding Claim 22, the combination of Hitz in view of Eshel, disclose a

method in a computer system for creating a snapshot in a file system while

modifying data associated with a file in the file system, wherein the file system is

organized hierarchically via file and directory nodes, said file and directory nodes

comprising current nodes and snapshot nodes after creation of the snapshot, the

method comprising:

copying data from a current root node of the file system to a snapshot root

node, wherein said snapshot root node has one or more current nodes

descendent therefrom (column 18, lines 19-27, Hitz);

replacing current nodes with new nodes as current nodes of the file

system are modified by file or directory changes (column 18, lines 30-48, Hitz).

However, Hitz is silent with respect to recording information for each current

node indicating whether the node was replaced due to current node modifications

since the snapshot root node was created; wherein said replacing comprises: (a)

using said recorded information to determine if a particular current node to be

modified has been previously replaced with a new node since the snapshot root

node was created; (b) if said particular current node to be modified has not been

previously replaced with a new node, using said recorded information to

determine whether one or more ancestor current nodes of said particular current

node have not been previously replaced with a new node since the snapshot was

created; (c) if one or more ancestor current nodes have not been previously

replaced, copying data from those current ancestor nodes that have not been

previously replaced to one or more new current ancestor nodes that are

descendent from said current root node but not descendent from said snapshot

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[1] Examiner notes – The term "dirty" throughout the "Hitz" reference represents modify (columns 6-7, lines

root node; and (d) if said particular current node to be modified has not been

replaced, copying data from said particular current node to be modified to a new

current node descendent from said new ancestor node but not descendent from

said snapshot root node. On the other hand, Eshel discloses recording

information for each current node indicating whether the node was replaced due

to current node modifications since the snapshot root node was created (column

8, lines 49-61, Eshel); wherein said replacing comprises: (a) using said recorded

information to determine if a particular current node to be modified has been

previously replaced with a new node since the snapshot root node was created

(columns 10-11, lines 63-67 and 1-9, respectively, Eshel); (b) if said particular

current node to be modified has not been previously replaced with a new node,

using said recorded information to determine whether one or more ancestor

current nodes of said particular current node have not been previously replaced

with a new node since the snapshot was created (column 18, lines 56-64, Eshel);

(c) if one or more ancestor current nodes have not been previously replaced,

copying data from those current ancestor nodes that have not been previously

replaced to one or more new current ancestor nodes that are descendent from

said current root node but not descendent from said snapshot root node

(columns 18-19, lines 65-67 and 1-43, Eshel); and (d) if said particular current

node to be modified has not been replaced, copying data from said particular

current node to be modified to a new current node descendent from said new

67 and 1, respectively, and column 11, lines 57-59 and column 12, lines 41-43).

ancestor node but not descendent from said snapshot root node (column 8, lines 18-29, Eshel). It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate Eshel's teachings into the Hitz system. A skilled artisan would have been motivated to combine in order to track multiple references of a file system without complicating the operation of the system and by more efficiently utilizing the memory within the processing system to support time sensitive tasks.

Regarding Claim 23, the combination of Hitz in view of Eshel, disclose the method wherein said particular node is a file node and said ancestor node is a directory node (column 7, lines 44-59, Eshel).

Regarding Claim 23, the combination of Hitz in view of Eshel, disclose the method wherein each new node created in said copying steps is associated with a snapshot identifier that identifies the snapshot during which it replaced a node (column 25, lines 11-18, Eshel) and including checking the snapshot identifier of an ancestor node (column 19, lines 25-33, Eshel) to determine whether it has been replaced during the current snapshot (column 20, lines 38-43, Hitz).

Regarding Claim 24, the combination of Hitz in view of Eshel, disclose the method wherein when a node is not to be part of a snapshot, associating an indication with that node so that node will not be replaced when it or any

descendent node is modified (Fig.11B; column 9, lines 55-63 and column 22,

lines 11-39, Hitz).

Regarding Claim 25, the combination of Hitz in view of Eshel, disclose the

method wherein the snapshot is accessed via the root node of the snapshot

(column 23, lines 20-21, Hitz).

Regarding Claim 26, the combination of Hitz in view of Eshel, disclose the

method wherein each new current node has an identifier that is different from the

identifier of the node it replaced (column 27, lines 12-18, Eshel).

Regarding Claims 27 and 29, the combination of Hitz in view of Eshel,

disclose the method including associating the identifier of each new current node

with the identifier of a snapshot node so that (column 11, lines 29-37, Eshel),

when a request to access a new current node originally identified by the identifier

of a snapshot node is received, that association is used to access the new

current node (column 13, lines 7-13, Eshel).

Regarding Claim 28, the combination of Hitz in view of Eshel, disclose the

method wherein the associating includes storing the identifier of the new node in

the snapshot node (column 13, lines 59-63, Eshel).

Regarding Claim 30, the combination of Hitz in view of Eshel, disclose the method wherein each node has a reference count that includes a count of the snapshots through which the node is accessible (column 25, lines 35-44, Eshel).

Regarding Claim 31, the combination of Hitz in view of Eshel, disclose the method wherein the file system is a Unix-based file system (column 23, lines 20-21, Hitz).

Regarding Claim 32, the combination of Hitz in view of Eshel, disclose the method wherein a snapshot identifier (column 25, lines 16-18, Eshel) is stored within at least some nodes (Fig.8B, item 802, Eshel).

Regarding Claim 33, the combination of Hitz in view of Eshel, disclose the method wherein a snapshot identifier (column 25, lines 16-18, Eshel) is stored as an attribute of at least some nodes (column 13, lines 20-25, Eshel).

Regarding Claims 36 and 37, the combination of Hitz in view of Eshel, disclose the method wherein when a block of a file is modified (column 18, lines 4-7, Hitz), the new node associated with that file is set to reference a block that contains the modified block (column 11, lines 57-59, Hitz), rather than the block that contains the unmodified data (column 19, lines 31-35, Hitz).

Regarding Claim 38, the combination of Hitz in view of Eshel, disclose the method including reference counting each snapshot that refers to a block (column 25, lines 35-44, Eshel) so that the block can be removed when there are no more references to the block (column 26, lines 6-9, Eshel).

Regarding Claim 39, the combination of Hitz in view of Eshel, disclose the method wherein the reference counting is performed using a table external to the block (column 5, lines 53-56, Hitz).

Regarding Claim 40, the combination of Hitz in view of Eshel, disclose the method wherein the table includes for each block a bit for each snapshot that indicated whether the block is referenced by the snapshot (column 18, lines 27-30, Eshel).

11.   **Claims 34 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hitz (US Patent No. 5,819,292) filed May, 31, 1995, in view of Eshel (US Patent No. 6,959,310) filed February 15, 2002, and further in view of Sekido (US Patent No. 6,311,193) filed September 28, 1998.**

Regarding Claim 34, the combination of Hitz in view of Eshel, disclose all of the claimed subject matter as stated above, However, the combination of Hitz in view of Eshel, are silent with respect to a virtual identifier being stored within at

least some nodes. On the other hand, Sekido discloses a virtual identifier being stored within at least some nodes (Fig.18; column 9, lines 33-44, Sekido). It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate Sekido's teachings into the Hitz in view of Eshel system. One would have been motivated to do so in order to ensure that the information being copied was correct and relevant to what was needed. The virtual identifier is an implicit or abstract representation of information and is therefore not physically on the system. As a result, this increases much needed storage space within the system.

Regarding Claim 35, the combination of Hitz in view of Eshel, and further in view of Sekido, disclose the method wherein a virtual identifier is stored as an attribute of at least some nodes (column 14, lines 17-21, Sekido).

Response to Arguments

Applicant's arguments with respect to newly amended/added claims 21 and 22 have been considered but are moot in view of the new ground(s) of rejection.
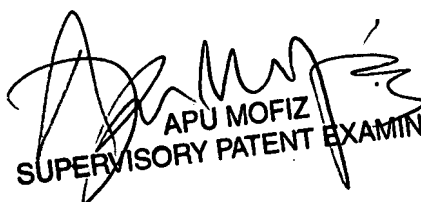
Points of Contact

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chelcie Daye whose telephone number is 571-272-3891. The examiner can normally be reached on M-F, 7:00 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Apu Mofiz can be reached on 571-272-4080. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Chelcie Daye
Patent Examiner.
Technology Center 2100
May 21, 2007

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SUPERVISORY PATENT EXAMINER